


Date: Wednesday, 1/23/2008 11:31:33 AM
User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : TUNNEL BOTTOM PANEL	
Job Number : 36911	Part Number : D3649041	
Estimate Number : 13026	Drawing Number : D3649 REV.B U/R	
P.O. Number :	Project Number : N/A	
This Issue : 1/23/2008 S.O. No. :	Drawing Revision : B U/R	
Prsht Rev. : NC	Material :	
First Issue : / / Type : SMALL /MED FAB	Due Date : 2/29/2008	Qty: 2 Um: Each
Previous Run : 35710		
Written By : <u>U</u>		
Checked & Approved By : <u>U</u>		
Comment : Est Rev:A New Issue 07-09-26 EC verified by: DD Est Rev:B ECN 1113P 08-01-22 DD		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	M304S26GA	304/316 0.018 SHEET
-----	-----------	---------------------



Comment: Qty.: 6.3725 sf(s)/Unit Total : 12.7449 sf(s)
304/316 SS sheet 26 ga (0.018" thick)
Batch: 106946 IB 8-2-4

2.0	WATER JET	FLOW WATER JET
-----	-----------	----------------



Comment: FLOW WATER JET
1-Cut as per Dwg D3649
Dwg Rev: B IB 8-2-4
Prog Rev: B
2-Deburr if necessary IB 8-2-4

②

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

4.0	QC8	SECOND CHECK
-----	-----	--------------



Comment: SECOND CHECK

IB 8-2-4 ②

5.0	BRAKE NC	NC BRAKE
-----	----------	----------



Comment: NC BRAKE
Form as per Dwg D3649

IB 08-03-13 ②

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TUNNEL BOTTOM PANEL

Job Number: 36911

Part Number: D3649041

Job Number:



Seq. #:

Machine Or Operation:

Description:

6.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

7.0

MS210603K

Nut Plate



Comment: Qty.: 22.0000 Each(s)/Unit Total: 44.0000 Each(s)

Nut Plate

M105938

8.0

MS210623K

Nut Plate



Comment: Qty.: 22.0000 Each(s)/Unit Total: 44.0000 Each(s)

Nut Plate

M105938

9.0

MS20427M33

Rivet



Comment: Qty.: 88.0000 Each(s)/Unit Total: 176.0000 Each(s)

Rivet

M106993

10.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1- Form dimple for MS20427M3 rivet per dwg D3649

*****ensure dimples are on the proper side*****

2-Assemble nutplates as per dwg D3649

08-03-13

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

ENGINEERING
APPROVAL

08-03-13

08/03/14

12.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and stock

Location:

38103

08-03-13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: D Date: 08/03/19
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 1/23/2008 11:31:33 AM

User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TUNNEL BOTTOM PANEL

Job Number: 36911

Part Number: D3649041

Job Number:



Seq. #:

Machine Or Operation:

Description:

13.0

QC21

FINAL INSPECTION/W/O RELEASE



08 03 18
A

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



u 08 03 14

POSITIVE RECALL

EFFECTIVE 08-06-31 AUTH u

RELEASED PH DATE 08.03.18

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 36911
Description: TUNNEL BOTTEM PANE2		Part Number: D3649-1
Inspection Dwg: D3649-1 Rev: B		Page 1 of 4

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø .098	+ .004 - .001	.099	X			
Ø .196	+ .005 - .001	.199	X			
Ø .250	+ .005 - .001	.250	X			
.400	± .010	.400	X			
.385	± .010	.385	X			
.250	± .010	.250	X			
44.57	± .030	44.57	X			
11.70	± .030	11.70	X			
3.370	± .010	3.370	X			
13.76	± .030	13.76	X			
4.300	± .010	4.300	X			
10.11	± .030	10.11	X			
12.90	± .030	12.90	X			
16.61	± .030	16.61	X			
15.80	± .030	15.80	X			
3.950	± .010	3.950	X			
.42	± .030	.42	X			
.41	± .030	.41	X			
.85	± .030	.85	X			
19.64	± .030	19.64	X			
.54	± .030	.54	X			
1.400	± .010	1.400	X			
2.63	± .030	2.63	X			

Measured by: IB
Date: 8-2-4

Audited by: J
Date: 08/02/04

Prototype Approval:
Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

DART AEROSPACE LTD		Work Order: 36911
Description: TUNNEL ROTTEM		Part Number: D3649-1
Inspection Dwg: D3649-1	Rev: B	Page 1 of 3

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
2.93	+/- .030	2.91	x			
1.49	+/- .030	1.49	x			
5.98	+/- .030	5.98	x			
.54	+/- .030	.54	x			
2.20	+/- .030	2.20	x			
2.75	+/- .030	2.75	x			
2.48	+/- .030	2.47	x			
1.16	+/- .030	1.16	x			
3.38	+/- .030	3.375	x			
2.00	+/- .030	2.00	x			
.90	+/- .030	.90	x			
16.64	+/- .030	16.64	x			
.48	+/- .030	.48	x			
13.80	+/- .030	13.80	x			
.46	+/- .030	.46	x			
11.76	+/- .030	11.76	x			
1.23	+/- .030	1.23	x			
.88	+/- .030	.88	x			
18.46	+/- .030	18.46	x			
5.23	+/- .030	5.237	x			
1.932	+/- .010	1.932	x			
1.943	+/- .010	1.942	x			
5.02	+/- .030	5.02	x			

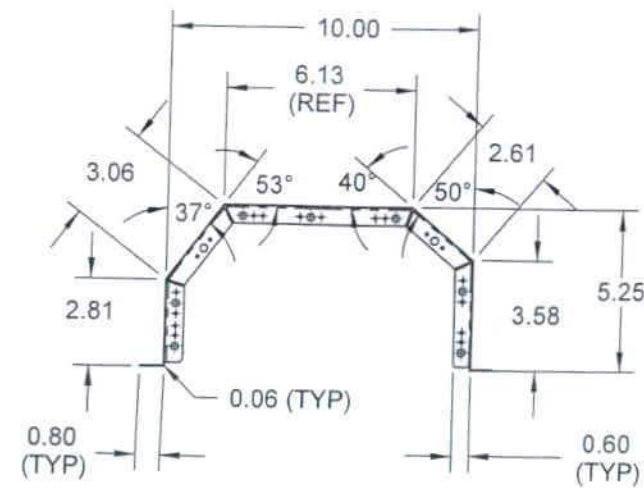
Measured by: RB
Date: 8-24

Audited by: [Signature]
Date: 08/24/04

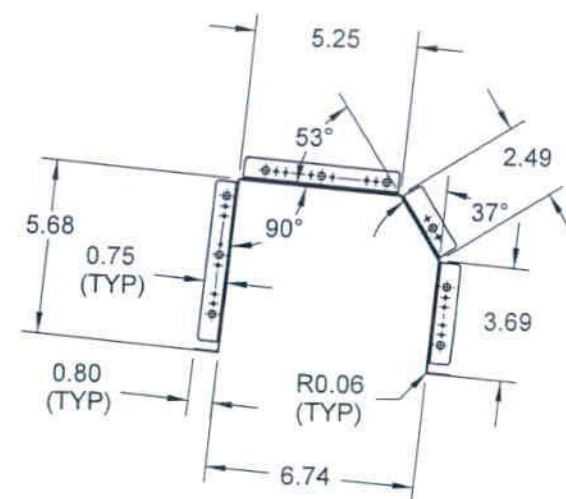
Prototype Approval:
Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

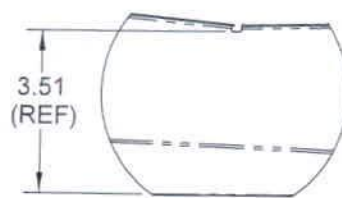
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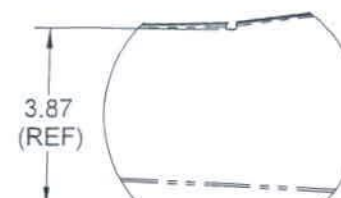
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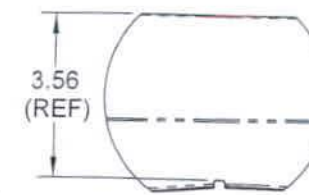
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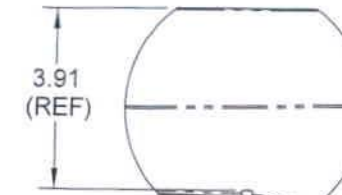
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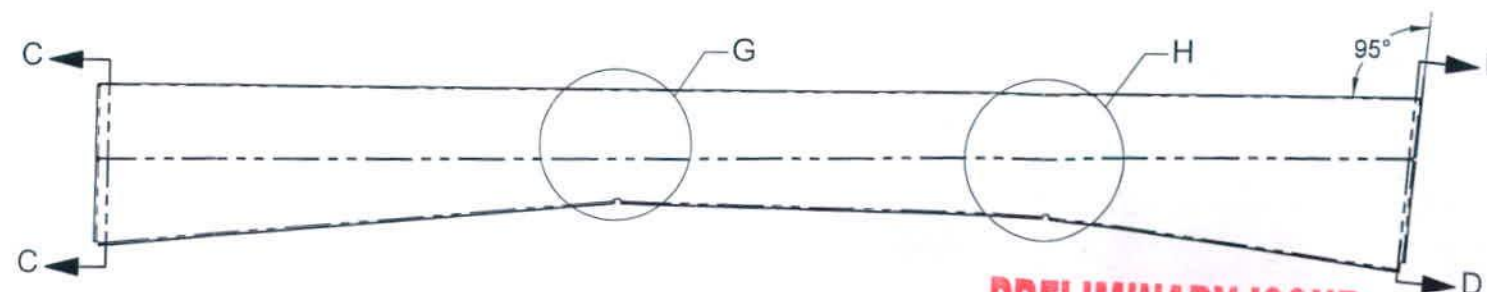
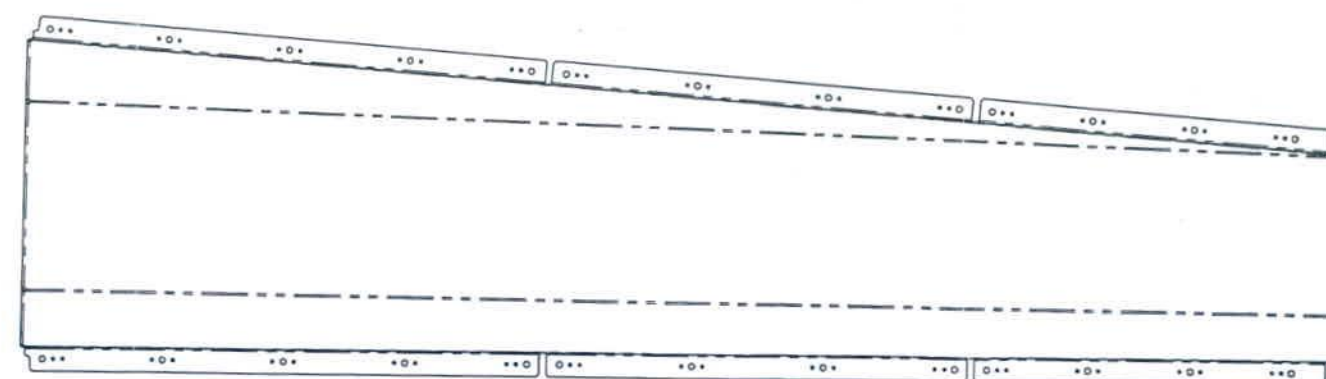
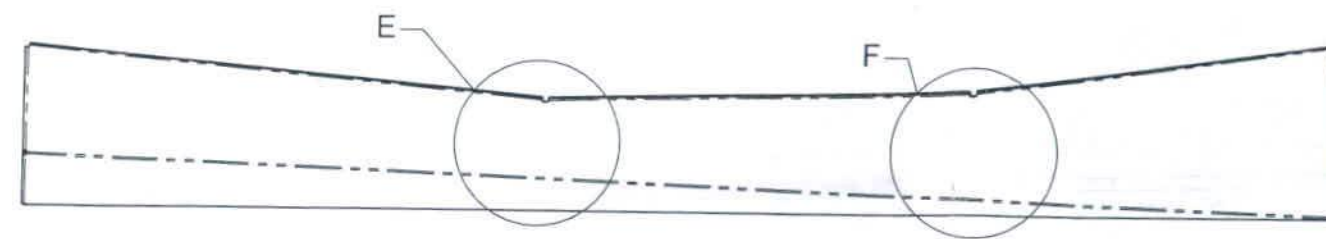
DETAIL F



DETAIL G



DETAIL H



PRELIMINARY ISSUE
LE 08.01.18

D3649-1 TUNNEL BOTTOM PANEL
(MAKE FROM D3649-1F)

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	LE	DRAWING NO.	REV. B
MFG. APPR.		D3649	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		BOTTOM PANEL ASSEMBLY	1:6
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8 7 6 5 4 3 2 1

D

C

B

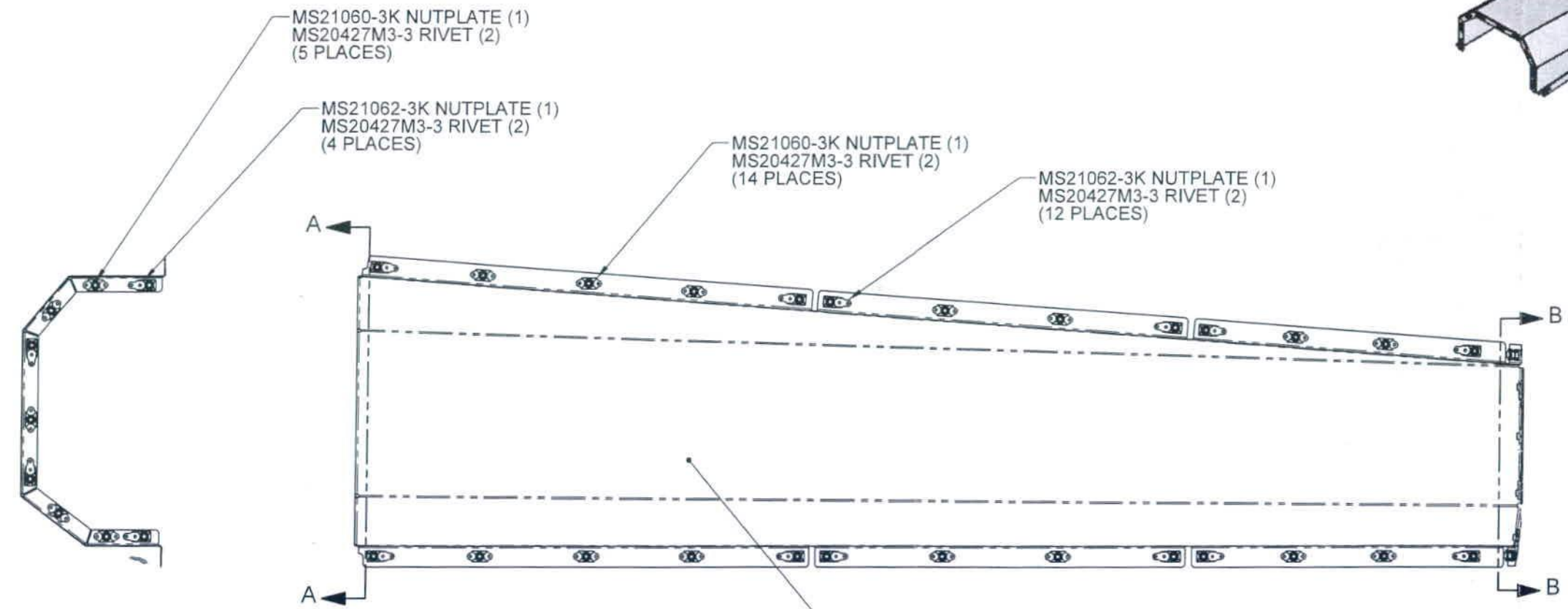
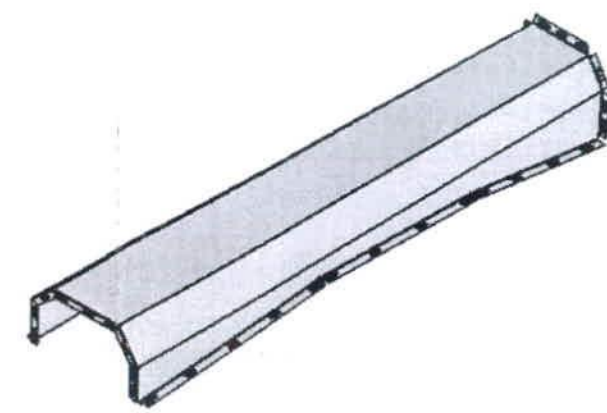
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D

C

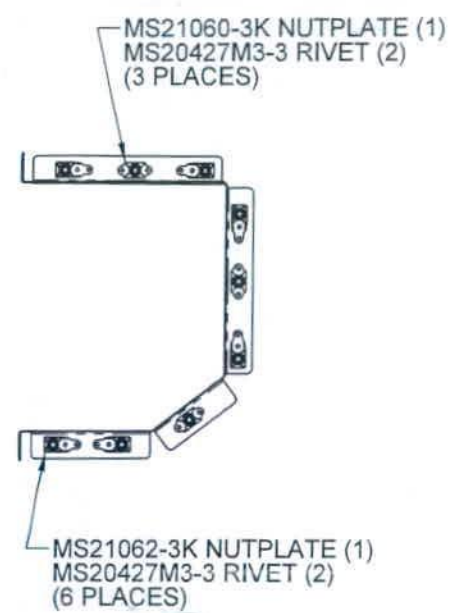
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A



SECTION A-A

D3649-1 TUNNEL BOTTOM PANEL



SECTION B-B

D3649-041 BOTTOM PANEL ASSEMBLY

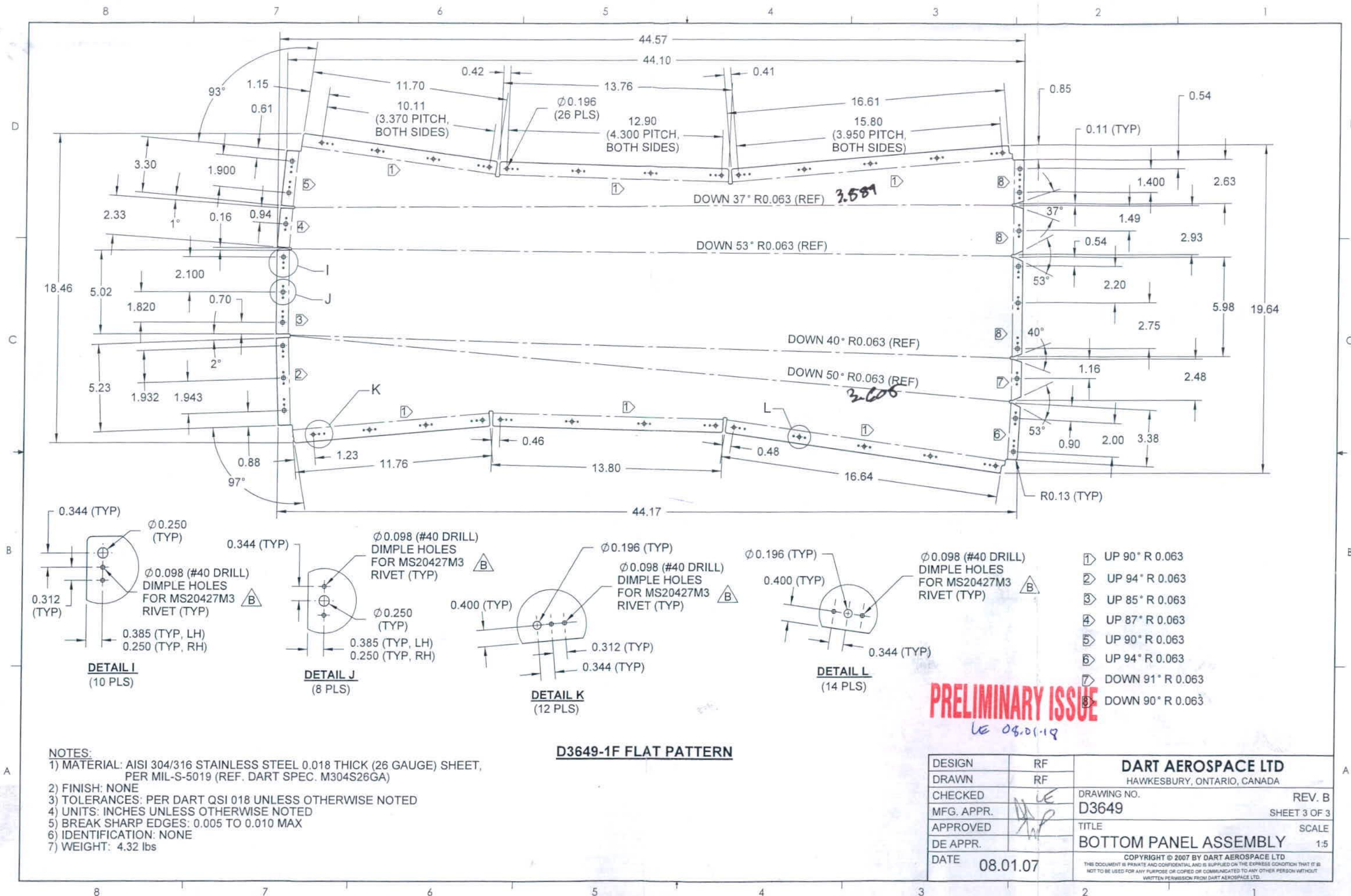
PRELIMINARY ISSUE

LE 08-01-18

PART LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3649-041	TUNNEL BOTTOM PANEL ASSY.
1	D3649-1	TUNNEL BOTTOM PANEL
88	MS20427M3-3	RIVET
22	MS21060-3K	NUTPLATE
22	MS21062-3K	NUTPLATE

B	PAGE 3: MS20427M3 WAS MS20427M-3	RF	08.01.07
A	NEW ISSUE	RF	07.11.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>LE</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D3649	SHEET 1 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.		BOTTOM PANEL ASSEMBLY	1:5
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NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 THICK (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 4.32 lbs

D3649-1F FLAT PATTERN

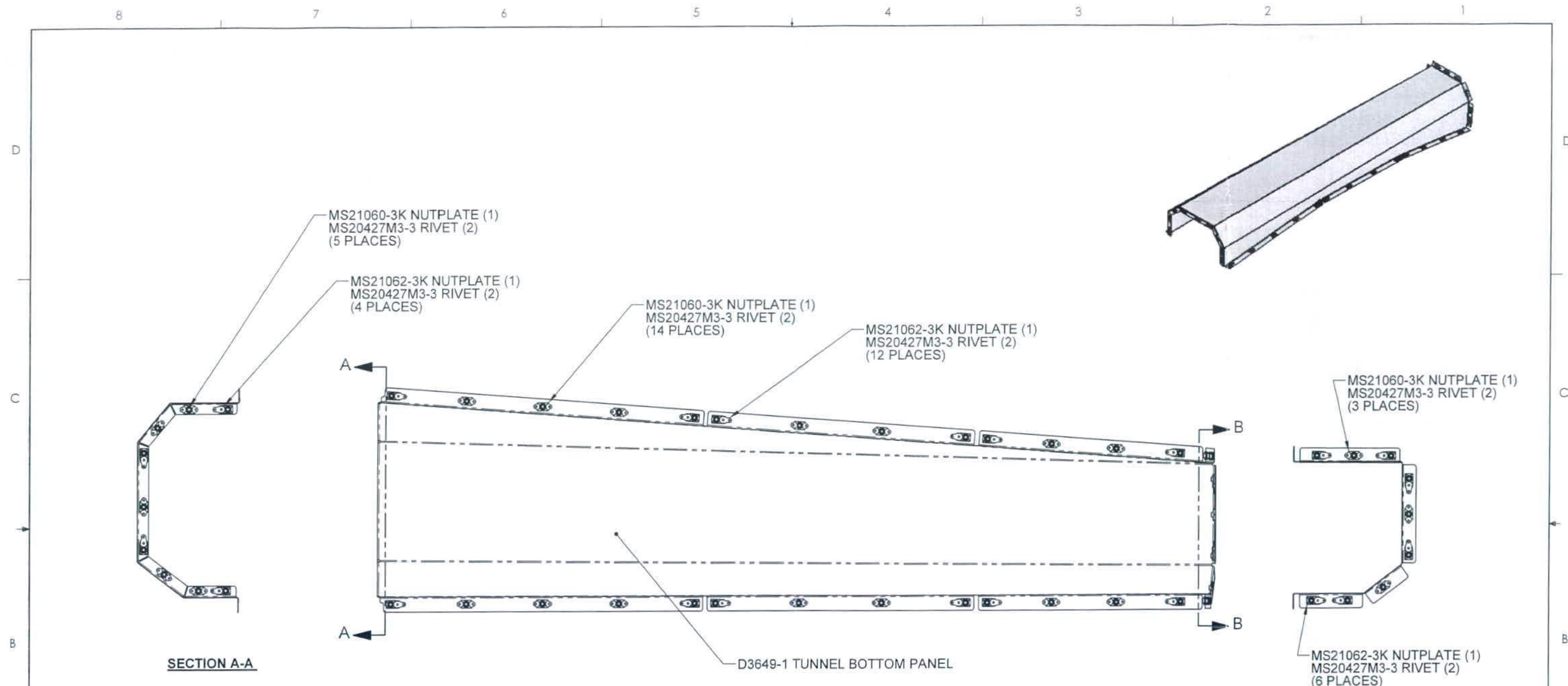
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LE 08.01.17

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DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	MA	D3649	SHEET 3 OF
APPROVED	MA	TITLE	SCALE
DE APPR.		BOTTOM PANEL ASSEMBLY	1
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1824

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SECTION A-A

D3649-1 TUNNEL BOTTOM PANEL

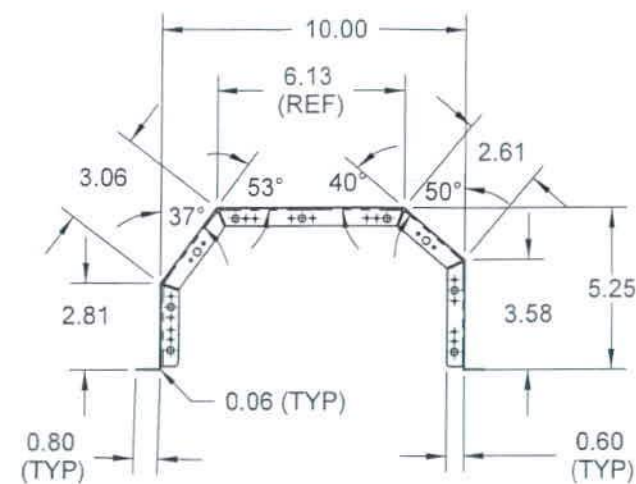
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D3649-041 BOTTOM PANEL ASSEMBLY

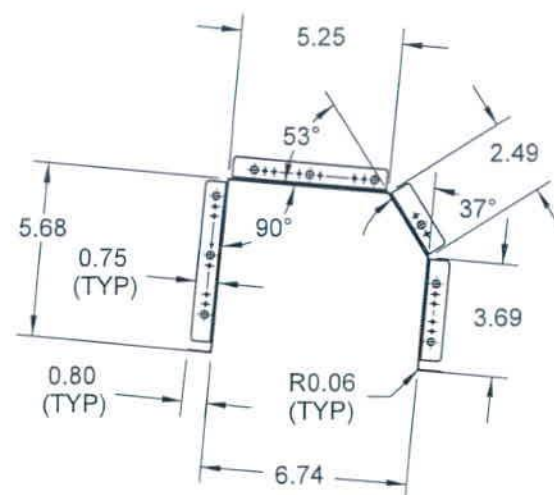
PART LIST

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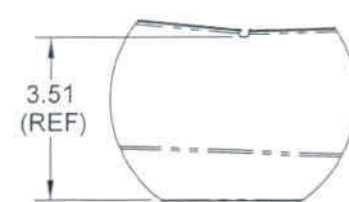
B	PAGE 3: MS20427M3 WAS MS20427M-3	RF	08.01.07
A	NEW ISSUE	RF	07.11.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	IE	DRAWING NO.	REV. B
MFG. APPR.	RF	D3649	SHEET 1 OF 3
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	BOTTOM PANEL ASSEMBLY	1:5
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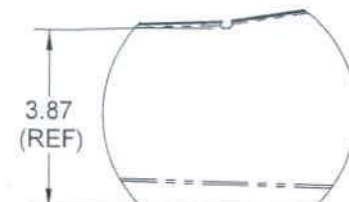
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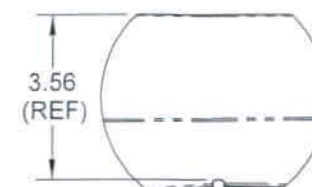
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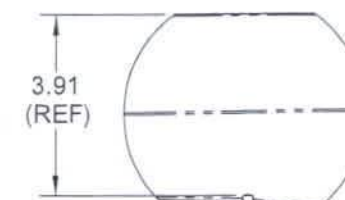
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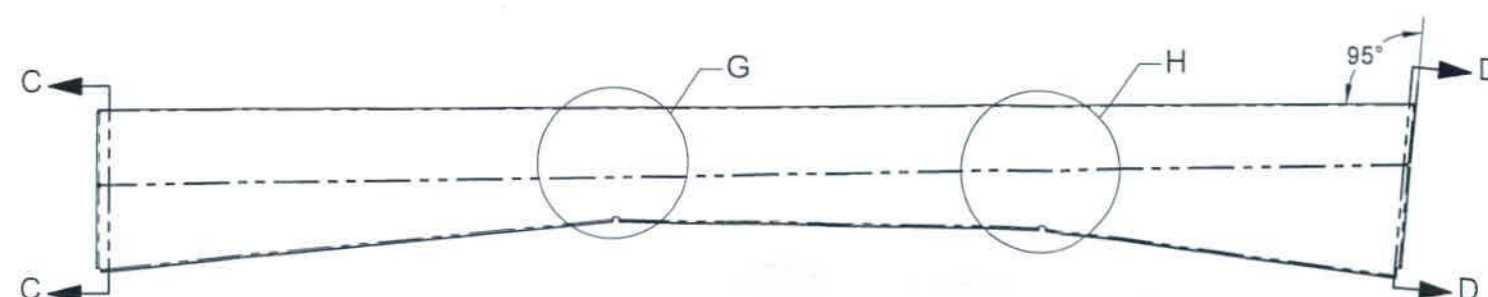
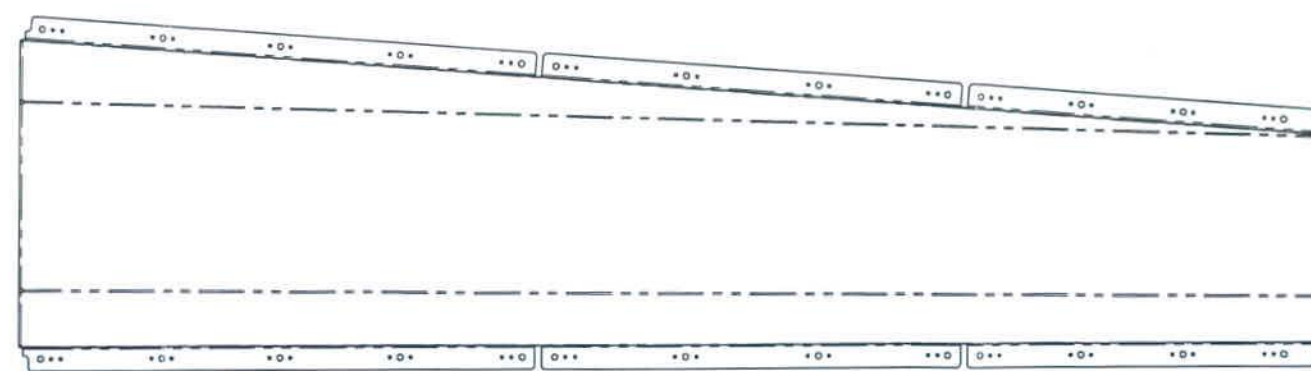
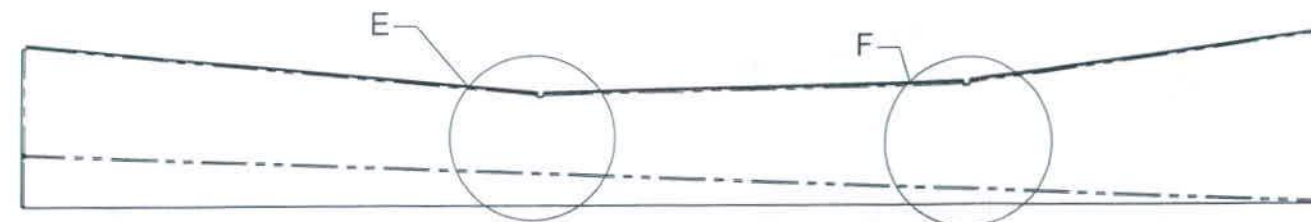
DETAIL F



DETAIL G



DETAIL H



D3649-1 TUNNEL BOTTOM PANEL.
(MAKE FROM D3649-1F)

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3649	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		BOTTOM PANEL ASSEMBLY	1:6
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